

L 13571-65 EWT(d)/EWT(m)/ENP(w)/ENP(v)/EM(k)/ENA(h)/ETC(m) IJP(c) WN/EM
 ACC NR: AP6001241 (A) SOURCE CODE: UR/0198/65/001/011/0007/0011

AUTHOR: Shabliy, O. N. (Ternopol')

ORG: Ternopol' Branch of the L'vov Polytechnic Institute (Ternopol'skiy filial L'vovskogo polytekhnicheskogo instituta)

TITLE: The bearing capacity of a sloping spherical shell reinforced along the edge

SOURCE: Prikladnaya mekhanika, v. 1, no. 11, 1965, 7-11

TOPIC TAGS: plastic deformation, ~~shell~~ ^{structure}, shell stability, spherical ^{structure} shell, shell ~~structure~~ buckling

ABSTRACT: The limiting equilibrium of a sloping spherical shell is studied on the basis of the Tresk criterion and the associated law of flow. The shell considered here is circular in plan, edge-reinforced, and loaded by a uniformly distributed transverse loading. It is shown in Fig. 1, where the shell thickness is $2h$, R is the radius of the shell in plan, and R_2 is the radius of curvature. The loading intensity q (the maximum bearing capacity of the shell) is sought. It is assumed that: 1) deflections and deformations of the shell are small; 2) the Kirchhoff-Lyav hypothesis is satisfied; 3) the shell material is elasto-plastic and in the limiting condition is totally plastic; and 4) the limiting condition is the threshold of loss of stability. A cylindrical coordinate system is adopted and dimensionless parameters describing displacements and rates of displacement under load are

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ACC NR: AP6001241

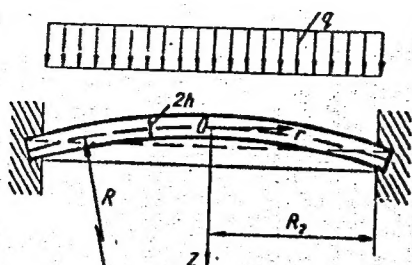


Fig. 1.

defined and incorporated into displacement equations. Plastic flow equations and equations for the location of the neutral surface of the shell are introduced. Annular and radial forces are defined and used in equations of equilibrium of a shell element. Integral formulae for force and moment intensities are introduced along with appropriate boundary conditions. The author derives an expression for a parameter defining the limiting load, and he describes the steps involved in solving for the parameter. Plots of the mutual variation of the limiting load and other parameters are shown. Orig. art. has: 3 figures and 29 equations.

SUB CODE: 20/ SUBM DATE: 13Jan65/ ORIG REF: 005/

CC
Card 2/2

DUBENYUK, V.M., gornyy inzh.; SEMENENKO, V.I., gornyy inzh.; SHABLYI,
V.I., gornyy inzh.; KIKOVKA, I.Ye., gornyy inzh.

Aeration of mines by a reactive ventilation equipment. Gor.
zhur. no.10:76-77 O '65. (MIRA 18:11)

1. Krivorozhskiy gornorudnyy institut (for Dubenyuk, Semenenko).
2. Novo-Krivorozhskiy gornobogatitel'nyy kombinat (for Kikovka, Shablyi).

FIL'KOV, Nikolay Iosifovich; ; SHABLIY, Vladimir Maksimovich; MAYZEL',
Mark Moiseyevich; SOBAKIN, V.V., inzh., red.; VOROB'YEVA, L.V.,
tekhn. red.

[Repair of the trucks of the TE3 diesel locomotive] Remont te-
lezhek teplovoza TE3. Moskva, Transzheldorizdat, 1962. 57 p.
(MIRA 15:12)

(Diesel locomotives—Maintenance and repair)

TEPLITSKIY, V.P.[Teplits'kyi, V.P.], red.; KORNIYCHUK, L.Ya.[Korniichuk, L.IA.], red.; SHABLIY, Ye.A.[Shablii, IE.A.], red.; LANDIN, B.O., red.; KADASHEVICH, O.O.[Kadashevych, O.O.], tekhn. red.

[History of economic thought in the Ukraine] Z istorii ekonomichnoi dumky na Ukraini. Kyiv, Vyd-vo Akad. nauk URSR, 1961. 346 p. (MIRA 15:4)

1. Akademiya nauk URSR, Kiev. Instytut ekonomiky.
(Ukraine—Economics)

SUPRUNENKO, R.S.; PRITYKIN, D.P.; NOVIKOV, B.G.; KISSIN, D.A.;
BERSHTEYN, R.S.; SHABLIYENKO, I.D.

Scrubbing of sintering furnace gas. Metallurg 9 no.10:14-15
O '64 (MIRA 18:1)

1. Zavod "Zaporozhstal".

GOL'DIN, A., inzh.; SHABLOV, V., inzh.

Mechanization of the construction of water pipelines. Sel'. stroi.
no.6:5-6 Je '62. (MIRA 15:7)
(Water pipes) (Pipe-laying machinery)

ZABUSELOV, N. (Novokuznetsk); NAGORNIY, A.; BRYZGALOV, P.; SHABLOV, V.
(Vologda); LARIONOV, dotsent (Moskva); MIROSHNICHENKO, V.
(Sverdlovskaya obl.)

Readers' letters. Pozh. delo 9 no.9:30-31 S '63. (MIRA 16:10)

1. Sotrudnik Rostovoskogo-na-Donu Upravleniya pozharnoy okhrany
(for Nagornyy).
2. Nachal'nik Yelabuzhskoy gorodskoy pozharnoy
chasti, Tatarskaya ASSR (for Bryzgalov).
(Fire prevention)

KVASHNEVSKAYA, N.V.; SHABLOVSKAYA, Ye.I.

Studying the ore elements in the suspensions of river drifts.
Dokl. AN SSSR 151 no.2:426-429 J1 '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut razvedochnoy
geofiziki. Predstavleno akademikom N.M.Strakhovym.
(Soviet Central Asia--Trace elements)
(Caucasus--Trace elements)

SHABLOVSKAYA, Ye. A.

md ✓ 3810. Phagocytosis of the scleroma bacillus of Volkovich-Frish. E. A. Shablovskaya. *Sborn. Rabot. Lvov. med. Inst.*, 1954, No. 2, 37-39; *Referat. Zh. Biol.*, 1956, Abstr. No. 80366.—In patients with scleroma of the respiratory tracts a weakly expressed phagocytosis of the capsular forms of the causative agent and a more intensive phagocytosis of the non-capsular forms is apparent. Penicillin treatment does not intensify phagocytosis, but streptomycin treatment activates it considerably. The clinical observations are confirmed by experiments in mice infected intraperitoneally with Volkovich-Frish bacillus. (Russian)

C. PRINGLE

and in the U.S. : SHANGHAI, K. Y. H.

Effect of nitroside on *Clostridium perfringens*. Microbiol. zhur.
1966, 2:38-42 '57. (MLBA 10:9)

1. 2 L'iviv'kogo institutu epidemiologii, mikrobiologii ta higiyeni.
(CLOSTRIDIUM PERFRINGENS, eff. of drugs on
microcide)
(ANTIBIOTICS, eff.
microcide, on Clostridium perfringens)

SHABLOVSKAYA, Ye.A., Cand Med Sci — (diss) "Study ^{U1} during
~~latent~~ ^{latent} wound infection in an experiment on the dynamics of
change of ~~the~~ microbe flora, changes occurring in the organism,
and ~~also of~~ penicillin electrophoresis as a method of
non-specific prophylaxis." L'vov, 1959, 15 pp (Min of Health
UkSSR. L'vov State Med Inst) 200 copies (KL, 35-59, 117)

SHABLOVSKAYA, Ye.A.

Electrophoresis of penicillin. Vop. kur., fizioter. i lech. fiz.
kul't. 24 no.6:536-539 N-D '59. (MIRA 15:1)

1. Iz L'vovskogo instituta epidemiologii, mikrobiologii i gigiyeny
(dir. - kandidat meditsinskikh nauk S.D.Klyuzko, nauchnyy rukovoditel'-
prof. L.A.Chernaya).
(ELECTROPHORESIS) (PENICILLIN)

17(2)

SOV/16-59-6-34/46

AUTHORS: Chernaya, L.A., Shablovskaya, Ye.A., Kovtunovich, L.G. and Kaplina, Z.I.

TITLE: The Variation of Clostridium Perfringens. II. The Variation of Clostridium perfringens During Prolonged Existence in the Body With Experimental Dormant Gas Gangrene Infection. Author's Summary.

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1959,⁵⁰ Nr 6, pp 127-128 (USSR)

ABSTRACT: A study was made of the variation of Clostridium perfringens in the conditions of a dormant gas gangrene infection. The foci of the dormant infection were created in guinea pigs and white mice by administering the corresponding microbes in lanoline. At regular intervals bacteria were isolated and tested for variation. The tests revealed three types of bacterium: 1) typical bacteria in the S form; 2) bacteria with changed cultural, morphological and tinctorial properties and 3) bacteria with very pronounced changes in their properties (in extreme cases their virulency and toxigenicity could not be restored even by repeated passages in animals). In the first month 75% of the strains isolated were of Type I. In the 4-6th month 31.8% were of type III and only 8.9 - 10.9% of Type I. In the 7-12th month 47.8% of the strains were of Type III. Poly-

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SOV/16-59-6-34/46

The Variation of Clostridium Perfringens. II. The Variation of Clostridium Perfringens During Prolonged Existence in the Body With Experimental Dormant Gas Gangrene Infection. Author's Summary.

infection in conjunction with Staphylococci or Salmonella paratyphi C and D led to more pronounced and frequent variation than monoinfection with Clostridium perfringens alone (72.6% compared to 42.2%). No changes in the antigen structure of the varied strains was noted, although their agglutination reaction titer was one step higher than that of the original Clostridium perfringens serum. The tests showed, then, that prolonged existence of Clostridium perfringens in the body during dormant gas gangrene infection led to a weakening of all the bacterium's properties, but particularly its virulency and toxigenicity. In most cases, however, pathogenicity could be restored by passages through animals.

ASSOCIATION: L'vovskiy institut epidemiologii, mikrobiologii i gigiyeny (L'vov Institute of Epidemiology, Microbiology and Hygiene)

SUBMITTED: February 10, 1958

Card 2/2

KOVTUNOVICH, L.G.; SHABLOVSKAYA, Ye.A.

Method of obtaining blood from white rats. Biul. eksp. biol. i med.
50 no.7:117-120 J1 '60. (MIRA 14:5)

1. Iz L'vovskogo instituta epidemiologii, mikrobiologii i gigiyeny
(dir. - kand.med.nauk S.D.Klyuzko, nauchnyy rukovoditel' - prof.
L.A.Chernaya). Predstavlena deystvitel'nyy chlenom AMN SSSR
V.V.Parinyan.

(BLOOD--COLLECTION AND PRESERVATION)

SAKHNOVSKAYA, G.K. [Sakhnovs'ka, H.K.]; SHABLOVSKAYA, Ye.A. [Shablovs'ka, IE.O.]; DOVZHANSKIY, S.I. [Dovzhans'kyi, S.I.]

Effect of microcide on the staphylococcal flora in chronic diffuse strepto-staphyloderma. Mikrobiol.zhur. 23 no.1:67-69 '61.
(MIRA 14:5)

1. L'vovskiy institut epidemiologii, mikrobiologii i gigyeny.
(MICROCIDE) (STAPHYLOCOCCAL INFECTIONS)
(STREPTOCOCCAL INFECTIONS)

KOVTUNOVICH, L.G.; SHABLOVSKAYA, Ye.A.

Interrelation between allergies and the level of tetanus
antitoxic immunity. Biul. eksp. biol. i med. 52 no.11:85-88
N '61. (MIRA 15:3)

1. Iz L'vovskogo instituta epidemiologii, mikrobiologii i
gigiyeny (dir. - kand.med.nauk S.D. Klyuzko, nauchnyy
rukovoditel' - prof. L.A. Chernaya). Predstavlena deystvitel'nyy
chlenom AMN SSSR N.N. Zhukovym-Verezhnikovym.

(TETANUS)

(TOXINS AND ANTITOXINS)

(ALLERGY)

KOVTUNOVICH, L.G.; SHABLOVSKAYA, Ye.A.

Comparative study of the sensitizing properties of purified, sorbed
as well as natural tetanus anatoxins. Zhur. mikrobiol., epid.
i immun. 33 no.2:14-19 F '62. (MIRA 15:3)

1. Iz L'vovskogo instituta epidemiologii, mikrobiologii i
gigiyeny.

(TETANUS ANTITOXIN)

SPABLOVSKAYA, Ye.A.

Some data on vertical migration of *Strongylides stercorarius*
in soil. Trudy Ukr. resp. nauch. ob-va paraz. no.2:74-80'63
(MIRA 17:3)

1. L'vovskiy institut epidemiologii, mikrobiologii i gigiyeny.

SHABLOVSKIY, A.G.

The tactic of Russian field artillery during the Russo-Turkish War of 1768-1774. Sbor. dokl. Voen. ist. sek. no. 3: 116-136 '60.

(MIRA 15:9)

(Russia--Army--~~Artillery~~)
(Russo-Turkish War, 1768-1774)

Report from "Jin L." The higher birds of the Hines were in the "M. in
L. Adversus" condition of life." And Vol Sei, Inst. of Microbiology, Acad
Sci USSR, 17 Jun 58. (Vol. myoga Tokyo, London, 10 Jun 58).

30: 577 JLC, 23 Jan 1964

SHABLIOVSKIY, V.V., entomolog; GUSEV, G.V., entomolog; YESIPENKO, P.A.

Potato ladybird beetle. Zashch. rast. ot vred. i bol. 9
no.2:24-25 '64. (MIRA 17:6)

1. Glavnyy agronom Khabarovskoy stantsii zashchity rasteniy
(for Yesipenko).

L 38998-66 EWT(d)/EWT(m)/EWP(k)/EWP(w)/EWP(v) IJP(c) EM/WW

ACC NR: AP6026794

(A)

SOURCE CODE: UR/0198/66/002/007/0050/0057

AUTHOR: Shabliy, O. N. (Ternopol'); Kupriychuk, P. F. (Ternopol')

4⁰B

ORG: Ternopol' Branch, L'vov Polytechnic Institute (Ternopol'skiy filial L'vovskogo politekhnicheskogo instituta)

TITLE: Determining the load capacity of shallow shells of revolution

SOURCE: Prikladnaya mekhanika, v. 2, no. 7, 1966, 50-57

TOPIC TAGS: revolution shell, shallow shell, ~~shell capacity~~, load capacity, limit equilibrium, shell buckling, ~~conical shell~~, ~~shallow conical~~ shell *structure, cyclic load, shell structure, strain, plasticity*

ABSTRACT: The possibility of obtaining the unique solution in determining the load-carrying capacity of a shallow shell of revolution is studied. The authors base their analysis on the Tresca criterion and the associated law of flow, using the concept of the "neutral" surface of the shell. A rigid-plastic shell of a circular or annular planform under symmetrical loading is discussed. The validity of the Kirchhoff-Love hypothesis is assumed, as are small displacements and strains in the shell material, which becomes completely plastic in the limit state (prior to buckling). Equations of equilibrium for a shallow shell of revolution are derived, taking into account the rates of strain in the radial and circumferential directions and the rate of variation of the middle-surface curvature of the shell. Using these equations, the limit equilibrium (which determines the load capacity of shallow

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ACC NR: AP6026794

D

conical shells) under combined (compression-bending and tension-bending) loadings is analyzed, expressions for determining the limit-state load parameters are derived, and the limit-equilibrium curves for shells of various geometric parameters are constructed. An analogous investigation is conducted of the limit equilibrium of a rotating shallow conical shell fixed along its large radius and subjected at the free end to uniformly distributed longitudinal and lateral loads. Orig. art. has: 2 figures and 29 formulas. [VK]

SUB CODE: 20/ SUBM DATE: 30Jun65/ 006/ ORIG REF: 006/ ATD PRESS: 5057

Card

2/2 NS

SHABLUN, T. N.

CHUKHROV, F.V.; SHUBNIKOV, O.M., doktor geologo-mineralogicheskikh nauk, redaktor; SHABLUN, T.N., redaktor; ZELENIKOVA, Ye.V., tekhnicheskii redaktor

[Colloids in the earth's crust] Kolloidy v zemnoi kore. Moskva, Izd-vo Akademii nauk SSSR, 1955. 670 p. (MLBA 8:11)
(Colloids)

SHABLYA, A.V.

ПРИКОТ'КО, П. Ф.

24(7) 3 PHASE I BOOK EXPLOITATION 30V/1365

L'vov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizichnyy zbirnyk, v. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Jazzer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Larkins, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauber, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Rakov, A.V. Dependence of the Line Width in Raman Spectrum on the Aggregate State of the Substance

229

Resayev, M.I. Photoelectric Study of the Form and Width of Raman Lines in Liquids and Solids

230

Pavlovskaya, T. Ye., and A.G. Pasynekiy. Variation in Absorption Spectra of Protein Solutions Due to Ionizing Radiation in Air and in Vacuum

235

Lavshin, L.V., and A.P. Khovanitskiy. Spectroscopic Study of the Ionization of Molecules of Acridine Compounds

240

Karyakin, A.V., and A.V. Shablya. Infrared-spectrographic Study of the Sensitization of the Photo-oxidation of Organic Compounds by Means of Anthraquinone Derivatives

243

Card 16/30

KARYAKIN, A.V.; SHABLYA, A.V.

Infrared spectrum study of photo-oxidation of organic compounds sensitized by anthraquinone derivatives. Fiz. sbor. no.3:243-245 (MIRA 11:8) '57.

1. Gosudarstvennyy ordena Lenina opticheskiy institut im. S.I. Vavilova.

(Anthraquinone) (Oxidation)
(Organic compounds--Spectra)

USSR/Physical Chemistry - Radiation Chemistry, Photochemistry,
Theory of Photographic Process.

B-10

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3912.

Author : A.V. Karyakin, A.V. Shablya.

Inst : Academy of Sciences of USSR.

Title : Study of Organic Compound Photo-Oxidation Sensitizing by
Anthraquinone Derivatives Using Infrared Absorption Spectra.

Orig Pub: Dokl. AN SSSR, 1957, 112, No 4, 688-691.

Abstract: The oxidation of benzaldehyde, tetralin and isopropyl-
benzene was carried out with uninterrupted bubbling with O₂
and irradiation by Hg-tubes SVDSh-250 and SVDSh-500 with
light filters. Anthraquinone (I), β -oxyanthraquinone (II),
 β -aminoanthraquinone (III), anthraquinone (IV), α -chlor-
anthraquinone (V), α -oxyanthraquinone (VI), α -aminoanthra-
quinone (VII) and 1,4-dioxyanthraquinone (VIII) served as sen-
sitizer. The reaction was followed by the appearance of OH

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USSR/Physical Chemistry - Radiation Chemistry, Photochemistry,
Theory of Photographic Process.

B-10

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3912.

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R001548510012-4"

absorption bands (6800 and 4220 cm⁻¹). I to V sensitize
oxidation, and VI to VIII do not, which the authors connect
with a strong fluorescence extinguishing in I to V by oxygen
and the presence of a triplet level in I to V; the fluores-
cence of VI to VIII is not extinguished by oxygen. The ini-
tial reaction stage is the transition of sensitizer S mole-
cule firsts into the excited and, after that, into the triplet
state, annexation of O₂ with the formation of the biradical
.SO₂., which starts the oxidation chain reaction by convert-
ing the oxidized molecule into the biradical state (oxidation
of benzaldehyde) or by dehydrogenating it with the radical
formation (oxidation of tetralin and isopropylbenzene).

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Card 1/4

ouum. By means of these methods the absorption bands of the solvent
which are very intensive in this spectrum range are removed entire-
ly. The absorption spectra of the mentioned substances are included

20-6-21/42

Structure of 9-Aminoacridine According to Spectrum Data

in figure 1, the frequencies in table 1. Herefrom it is to be seen that 1- and 2-aminoacridine have two narrow absorption bands with a frequency of 3410 and 3485 cm^{-1} . These are generally classed with the symmetrical and the antisymmetrical oscillations of the NH_2 group. The values of the frequencies agree well with those of the 9-aminoanthracene. From the carrying out of a comparison the authors draw the conclusion that the frequency 3440 cm^{-1} in the 9-aminoacridine also shall be put to the oscillation frequency of the group $>\text{NH}$ group, i.e. they assume an acridone-amine-tautomerism I. Although this frequency still thereto corresponds to a frequency in the acridine ion, it is due to the oscillations of the group $>\text{NH}$ for the case that the nitrogen of the heterocycle is tetravalent and positively charged. If an inside ionized structure of the 9-aminoacridine is assumed as (II)



(II)

then the frequency decrease of the fluctuations of the group NH , compared to secondary amines as well as pyrrol and indol, may be defined as consequence of the presence of a positively charged ni-

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20-6-21/42

Structure of 9-Aminoacridine According to Spectrum Data

trogen. The second band with a frequency 3520 cm^{-1} being of much more importance than for the imine group, has to be arranged analogically to the NH group possessing a bivalent negatively charged nitrogen. Further proofs for the inside ionized structure, among others for acridone, are mentioned, too. Figure 2 gives absorption spectra in the range of from 1700 to 700 cm^{-1} , meanwhile the frequencies are concentrated in table 2. From table 2 is to be seen that 1, 2-aminoacridine and 9-aminoanthracene possess only one band with a frequency of $1640 - 1650\text{ cm}^{-1}$. It is assigned to the deformation oscillation of the NH_2 group, whilst 9-aminoacridine shows 2 bands ($1650 - 1570\text{ cm}^{-1}$). The latter frequency has to be put into connection with the deformation oscillations of the group $>^+\text{NH}$, where the nitrogen belongs to the heterocycle. The spectrum data additionally confirm the conclusion originally drawn that 9-aminoacridine possess the structure of an acridone-imine with inside ionized structure. The same was confirmed by luminescence spectra (ref. 8) at different pH. At aminopyridine tautomerism is not to be assumed, being true in the case of amino-chinoline, too. There are 2 figures, and 9 references, 6 of which are Slavic.

Card 3/4

Structure of 9-Aminoacridine According to Spectrum Data

20-6-21/42

PRESENTED: May 22, 1957, by A.N. Terenin, Academician

SUBMITTED: May 17, 1957

AVAILABLE: Library of Congress

Card 4/4

AUTHORS: Shablya, A.V. and Karyakin, A.V.

SO7/51-5-1-5/19

TITLE: Spectra of Chlorophyll and its Analogues in the Adsorbed State
(Spektry khlorofilla i yego analogov v adsorbirovannom sostoyanii)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 1, pp 44-50 (USSR)

ABSTRACT: The authors investigated the effect of molecular oxygen, water vapour, ethyl alcohol, benzene and other substances on fluorescence of chlorophyll a + b, pheophytin a + b and of phthalocyanins of magnesium, zinc and without metal, adsorbed on magnesium oxide, silica gel and aluminium oxide under the conditions identical with those described in Ref 1. The fluorescence spectra of the adsorbed dyes were recorded using an ISP-17 mirror monochromator with a glass prism. Photomultipliers were used as receivers and the fluorescence was excited with a group of lines near 365 mμ from a mercury-quartz lamp SVDSH-250-3. The diffuse reflection spectra were measured using a recording spectrophotometer SF-2M. The positions of the absorption and fluorescence maxima of the studied dyes are given in the table on p 46. Figs 1 and 2 give the changes of the fluorescence and absorption spectra of Mg phthalocyanin after heating under vacuum at various temperatures. Fig 3 shows quenching of Mg phthalocyanin fluorescence by oxygen. Fig 4 shows the effect of water vapour on the

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SOV/51-5-1-8/19

Spectra of Chlorophyll and its Analogues in the Adsorbed State

fluorescence spectrum of chlorophyll a + b. Figs 5 and 6 show the effects of water vapour and ethyl alcohol on the fluorescence spectra of chlorophyll a + b and Mg phthalocyanin respectively. The fluorescence and absorption spectra of the dyes studied in the adsorbed state were displaced with respect to the same spectra where these dyes were in solution. Adsorption of water vapour, ethanol, ether and other substances produces changes in the fluorescence spectra of adsorbed dyes in such a way as to make these spectra resemble more closely those obtained in solution. Oxygen produces uniform quenching of the fluorescence spectra. The results do not confirm Gachkovskiy's suggestion (Refs 1, 2) that the absorption and fluorescence spectra of chlorophyll and phthalocyanin are due exclusively to attachment of an oxygen-containing molecule to the central Mg atom, since in similar molecules which do not contain Mg the absorption and fluorescence spectra are also observed. The authors thank A.N. Terenin for suggestion of this work and his advice. There are 6 figures, 1 table and 10 references, 8 of which are Soviet, 1 American and 1 German.

Card 2/2

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S.I. Vavilova (State Optical Institute imeni S.I. Vavilov) 1. Chlorophylls-Fluorescence 2. Chlorophylls-Spectra 3. Magnesium phthalocyanin-Fluorescence 4. Magnesium phthalocyanin-Spectra

SUBMITTED: January 21, 1958

SOV/51-5-6-4/19

AUTHORS: Karyakin, A.V. and Shablya, A.V.

TITLE: Oxygen Quenching of Fluorescence of Adsorbed Chlorophyll and its Analogues (Tusheniye kislorodom fluorestsentsii khlorofilla iyego analogov v adsorbirovannom sostoyanii)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 6, pp655-662 (USSR)

ABSTRACT: The authors studied oxygen quenching of fluorescence of chlorophyll a+b, pheophytin a+b, zinc, magnesium and metal-less phthalocyanin, adsorbed on silica gel. The effect of water and ethanol molecules on the fluorescence spectra was also studied. Phthalocyanins were adsorbed as vapours under conditions of high vacuum. Chlorophyll and pheophytin were adsorbed from alcohol solutions and the samples were then outgassed under high vacuum at room temperature. Fluorescence of adsorbates was excited with the 366 mμ line from a mercury lamp SVDSH-250 with two filters UFS-4 and SZS-10. A glass mirror monochromator ISP-17 (GOI system) with a mechanical scan of light was used. A photomultiplier FEU-22 connected to a self-recording electronic potentiometer EPPV-51 was used to measure the intensities. Table 1 gives the positions of the absorption and fluorescence maxima of the five substances studied. Figs 1 and 2 show the effect of water and ethanol vapours (Fig 1) and of oxygen (Fig 2) on the fluorescence

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SOV/51-5-6-4/19

Oxygen Quenching of Fluorescence of Adsorbed Chlorophyll and its Analogues

spectra of chlorophyll a+b (Figs 1a, 2a) and of Mg phthalocyanin (Figs 1b, 2b). Fig 3 shows the quenching effect of oxygen on the fluorescence of the five substances studied as a function of oxygen pressure in mm Hg (abscissa). The quenching effect (ordinate) is given in the form of two ratios J_0/J_p and J_p/J_0 , where J_0 is the initial fluorescence intensity and J_p is the intensity at a given pressure of oxygen. Table 2 gives the mean values of the excited-state lifetimes of chlorophyll and its analogues, calculated from the slopes of the straight lines $J_0/J_p = f(p)$ in Fig 3. These calculated values are repeated in Table 3 (col. 2) and are compared with the excited state lifetimes measured with a fluorimeter (col. 3). The authors make the following conclusions. (1) The fluorescence spectra of the five substances studied, adsorbed on silica gel, are dispersed and broadened compared with the fluorescence spectra of the same substances in ethanol, acetone, ether and other solutions. (2) Oxygen is found to quench the fluorescence of adsorbates. (3) Vapours of water, ethanol, ether, etc., were found to alter the fluorescence spectra of adsorbates in such a way as to make them similar to the spectra of solutions.

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SOV/51-5-6-4/19

Oxygen Quenching of Fluorescence of Adsorbed Chlorophyll and its Analogues

(4) The anomalous effects reported by Gachkovskiy (Ref 4) for the five substances discussed here when adsorbed on MgO were not observed when silica gel was used. The authors thank A.M. Terenin who directed this work. There are 3 figures, 3 tables and 22 references, 12 of which are Soviet, 5 American, 4 mixed and 1 Dutch.

SUBMITTED: January 21, 1958.

Card 3/3

83925

5.5310

S/051/60/009/004/026/034
E201/E191

AUTHORS: Shabliya, A.V., and Terenin, A.N.

TITLE: The Spectrum of a Negative Phthalocyanin Molecular Ion

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 533-535

TEXT: The absorption spectra of negatively charged molecules of naphthalene, anthracene, phenanthrene, etc., consisting of bands in the visible region, were reported by several workers (Refs 1,2). These molecular ions were produced by reacting solutions of such hydrocarbons with metallic sodium in vacuum (Ref 3). The same technique was employed to produce molecular negative ions of magnesium phthalocyanin and of chlorophyll in 10^{-5} mm Hg vacuum. Tetrahydrofuran or diethyl ether were used as solvents. The concentration of the solutions was about 10^{-3} mole/litre. A vacuum cell employed by the authors is shown schematically in Fig 1. The solutions were poured into branch C of the cell (Fig 1) which contained a sodium mirror. The absorption spectra, recorded using spectrophotometers $\text{C}\Phi\text{-2M}$ (SF-2M) and $\text{C}\Phi\text{-4}$ (SF-4) directly after treatment with sodium (Fig 2), showed that the new product had a spectrum with maxima at 570, 640 and 950 m μ (the latter was weak). After 40 hours the 950 m μ band disappeared completely and new bands

Card 1/2

83925
S/051/60/009/004/026/034
E201/E191

The Spectrum of a Negative Phthalocyanin Molecular Ion appeared at 530 and 790 m μ . When air was let into the cell original phthalocyanin was rapidly generated; it had an absorption spectrum with maxima at 610, 640 and 675 m μ . It was concluded that the primary product, produced by capture of sodium electrons by the dye, was first adsorbed on the metal. The observed absorption spectrum and red colour were due to a more stable secondary product, produced by an interaction of primary ionic radicals with each other and with the metal (spectra of the primary products were not observed at all). Experiments with chlorophyll gave no interpretable results because moisture could not be removed entirely. Reaction of metal-less phthalocyanin with sodium produced sodium phthalocyanin. Acknowledgements are made to P.A. Moshkin for supply of pure tetrahydrofuran. There are 2 figures and 9 references: 3 Soviet, 4 English and 2 French.

SUBMITTED: May 20, 1960

Card 2/2

TERENIN, A.N.; LYUBOMUDROV, Ye.B.; SHABLYA, A.V.

Formation of unstable forms of phthalocyanines and
hamatoporphyrin under pulsed illumination. Izv. AN SSSR.
Otd.khim.nauk no.7:1206-1213 J1 '61. (MIRA 14:7)
(Phthalocyanine--Spectra) (Hematoporphyrin--Spectra)

SHABLYA, A.V.; TERENIN, A.N.

Phototransfer to protons in acridine derivatives at low temperatures,
as observed in luminescence spectra. Opt.i spektr. 10 no.5:617-620
My '61. (MIRA 14:8)

(Acridine—Spectra) (Protons)

ACCESSION NR: AP4043023

S/0051/64/017/002/0298/0299

AUTHORS: Kholmogorov, V. Ye.; Shablya, A. V.

TITLE: EPR investigation of the products of dark reduction of phthalocyanines by metallic sodium

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 298-299

TOPIC TAGS: phthalocyanine, sodium, electron paramagnetic resonance, absorption spectrum

ABSTRACT: This is a continuation of earlier research (A. V. Shablya, A. N. Terenin, Opt. i spektr. v. 9, 533, 1960) on the ion-radical of phthalocyanine of magnesium (MgPhc). All experiments were carried out in vacuum (10^{-4} -- 10^{-5} mm Hg) with MgPhc solutions in tetrahydrofurane at concentrations 10^{-3} -- 10^{-4} m/l. A special cuvette made it possible to measure the absorption spectra and the electron paramagnetic resonance (EPR). Metallic sodium in the form of a mirror was

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ACCESSION NR: AP4043023

produced in the same cuvette by thermal decomposition of sodium azide under continuous evacuation. The apparatus had a concentration sensitivity 5×10^{-12} mole and was calibrated against a DPPH EPR signal. The tests showed that the product produced after the interaction between the MgPhc and the sodium has an absorption spectrum with maxima at 420, 530, 570, 640, and 950 nm (curve 1 of Fig. 2), in agreement with the earlier results. All the maxima disappeared when oxygen was admitted into the reaction tube (curve 3). A similar result is obtained if no care is taken to eliminate the absorbed water prior to the experiment (curve 2). The results indicate that two products result from the reaction, of which only one produces an EPR signal. The factors contributing to each product are briefly discussed. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 08Oct63

SUB CODE: OP

NR REF SOV: 004

ENCL: 01

OTHER: 003

Card 2/3

ACCESSION NR: AP4043023

ENCLOSURE, 01

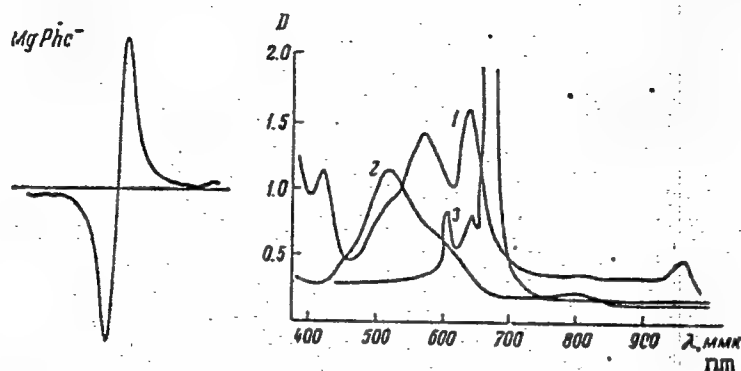


Fig. 1 (left). EPR signal of negative ion-radical of MgPhc^- in tetrahydrofuran (10^{-4} m/l). $g = 2.003$, $H = 5$ Oersted

Fig. 2.(right). Absorption spectra of MgPhc following interaction with metallic sodium in a tetrahydrofuran solution.

Card 3/3

PHILIP G. GRAY, V. Ye.; SHADAYA A.V.

Use of the paramagnetic resonance method in studying the products of the dark reduction of phthalocyanines by metallic sodium. Opt. i-spektr. 17 no.2:298-299 Ag¹⁶⁴ (MIRA 17:8)

L 63300-65 EWT(a)/EWT(1)/EWT(m)/EWT(c)/EWT(v)-2/EPF(n)-2/EPF(j)/T/ENG(c) RDP(1)

ACCESSION NR: AP5018090

UR/0020/65/163/001/0157/0160

AUTHOR: Shablya, A. V.; Lashkov, G. I.; Terenin, A. N. (Academician)

TITLE: Spectral investigation of the reversible phototransfer of protons in the sublimated binary films of organic compounds at low temperatures

SOURCE: AN SSSR. Doklady, v. 163, no. 1, 1965, 157-160

TOPIC TAGS: fluorescence spectrum, proton phototransfer, proton donor, proton acceptor, acid strength, hydrogen bond, vacuum sublimation, reversible phototransfer, excess oscillation energy, excited state, photon emission

ABSTRACT: Proton phototransfer, first revealed by the reversible change in the luminescence spectrum of a film of acridine sublimated together with solid acids, when shortwave UV light deprotonized the acridine cation in a vacuum at $T = 90^\circ\text{K}$, the cation being subsequently regenerated by heating of the film to $T = 298^\circ\text{K}$ in darkness (A.N.Terenin, A.V.Karyakin, DAN, 8,425,1947), was later found also to exist under the same conditions between "amphoteric" molecules with both antidonor and anti-acceptor groups at their ends. Subsequently it was discovered that in liquid and frozen solutions the proton affinity of the acceptors and donors in the excited

Card 1/3

L 63800-65

ACCESSION NR: AP5018090

state differs from that in the non-excited state. In this connection, the authors investigated the vacuum deposition of donor-acceptor mixtures on using 3,6-diaminoacridine and 3-aminoacridine as the bases, i.e. the proton acceptors and 2-naphthol and oxalic and salicylic acids as the proton donors and employing the vacuum sublimation of both components. The sublimated film was exposed to 298°K for 15 minutes in darkness, whereupon it was illuminated with a mercury lamp, reheated, and refrozen, with corresponding changes in the measured fluorescence spectra. The stages of the process of formation of the hydrogen bond during cooling and the transition of the proton under illumination from salicylic acid and 2-naphthol to 3,6-diaminoacridine could be traced in nonpolar solvents. The experiments revealed that thermal energy at room temperature is sufficient for the transfer of the proton from a strong acid to an acridine base. At 90°K in the rigid sublimated film there is a need for an excess oscillational energy imparted to the hydrogen bond $-O^{\cdot-} \dots H^+ - A$, for the transfer of the proton to the anion. When selecting organic acids as the proton donors, strength of the acid, pK, may tentatively be used as the criterion of the behavior of these acids in crystalline state. Schematically, the reversible phototransfer of the proton from AH^+ to $O^{\cdot-}$ may proceed in two ways: in the fundamental state, immediately following the act of the emission of the proton $h\nu$ by the protonized acceptor, or, in the excited state of the protonized acceptor, owing to the excess oscillational energy on excitation by larger photons.

Card 2/3

L 67300-35

ACCESSION NR: AP5018090

The direction in which the proton phototransfer reaction proceeds depends on the ratio between the acid and basic properties of the interacting molecules in the fundamental and excited states and is determined by two processes: the utilization of the excess oscillational energy in the fundamental or excited states in order to overcome the barrier, and the change in the donor-acceptor properties of molecules in excited state. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 29Mar65

ENCL: 00

SUB CODE: NP, OP

NO REF SOV: 002

OTHER: 007

llc
Card 3/3

L 15747-66 ENT(m)/ENP(j) RM

ACC NR: AP5027679

SOURCE CODE: UR/0051/65/019/005/0821/0824

AUTHOR: Lashkov, G. I.; Shablya, A. V.

CRG: none

TITLE: Photochromatic transformations in spiropyran by luminescence

SOURCE: Optika i spektroskopiya, v. 19, no. 5, 1965, 821-824

TOPIC TAGS: computer technology, computer memory, carbon compound, photochemistry, luminescence, fluorescence, *absorption spectrum, luminescence spectrum*

ABSTRACT: J. Hirschberg (The New Scientist, 2 June 1960, The photochemical memory) mentioned spiropyran as being promising compounds for use in the memory units of computers because of their so-called photochemical memory. The photochemical transformations in 1,3,3-trimethylindoline-benzopyryliumspiran-6'-nitro-8-bromine were studied on the basis of the changes in the absorption and luminescence spectrums. The absorption spectrum of spiropyran was a superposition of the spectrums of at least 2 modifications of its molecule. The same conclusion based on the presence in solution at room temperature of several isomers was reached

1/2

UDC: 535.37+541.143

L 15767-66

ACC NR: AP5027679

2

during interpretation of the spectrums of fluorescence excitation. The position of the long-wave maximum changed according to the region of the luminescence spectrum from which the recording of the excitation function was made. The sequence of isomer varieties, which formed during photocoloring, and their relative stability could be studied only under deep cooling in a rigid medium. In fact, an isomer having a long-wave absorption ($\lambda_{\max} = 539 \text{ m}\mu$) and also luminescence was observed during irradiation by ultraviolet light of the discolored solutions of spiropyran cooled to 4 or 70K. A slight increase in temperature (to 83K) resulted in the formation of the next isotope according to stability having an absorption at $\lambda_{\max} = 520 \text{ m}\mu$. This isomer was transformed at 90K into the other isomer having its spectral absorption maximum at $\lambda_{\max} = 505 \text{ m}\mu$. The author thanks A. N. Terenina and M. V. Savost'yanova for their interest in his work. Orig. art. has: 2 figures.

SUB CODE: 09,07/ SUBM DATE: 10Apr65/ ORIG REF: 002/ OTH REF: 006

2/2

L 31509-66 ENT(m)/ENP(j)/T IJP(c) DS/RM

ACC NR: AP6013035

SOURCE CODE: UR/0051/66/020/004/0738/0740

AUTHOR: Shablya, A. V.; Demidov, K. B.; Polyakov, Yu. N.

ORG: none

TITLE: Measurement of the quantum yields of photochromic reactions of spiropyrans in polymer media by a luminescence method

SOURCE: Optika i spektroskopiya, v. 20, no. 4, 1966, 738-740

TOPIC TAGS: luminescence, quantum yield, organic solvent, polymer chain, COLOR, PHOTOCHROMIC EFFECT

ABSTRACT: In view of increased recent interest in photochromic phenomena (reversible spectral changes induced by radiations of different wavelengths), especially in spiropyran, but the slight attention paid so far to the quantum yield of this process, the authors have determined the quantum yields by determining the rate of photocoloring of various bromo- and nitro-derivatives of spiropyran, introduced into polymers. This method is claimed to be simpler than the absorption method used by other investigators, and requires a smaller sample. The theory of the method is briefly outlined. The tests established the presence of appreciable colored fluorescence in the investigated spiyrans in the polymer chains, in analogy with the fluorescence in solution, previously observed by one

Card 1/2

UDC: 541.143

L 31509-66

ACC NR: AP6013035

3

of the authors (Shablya, with G. I. Lashkov, Opt. i spektr. v. 19, 821, 1965). The samples were prepared by dissolving the polymer spiropyran in a solvent and slowly evaporating the mixture to form a thin film. When irradiated with ultraviolet light the film colored, and subsequent exposure to daylight removed the coloring. The quantum yield was determined by using a calibrated photocell. The values obtained for the quantum yields are tabulated; they exceed those obtained for solutions, suggesting that the polymer host contributes to a more effective formation of the colored fluorescence. The authors thank A. N. Terenin and M. V. Savost'yanova for interest in the work and for valuable advice, and M. N. Smolkin for calibrating the photocell. Orig. art. has: 1 figure, 3 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 19Jun65/ ORIG REF: 001/ OTH REF: 008

Card 2/2mc

SHNAYDER, B.I.; SHABLYA, K.A.

Seminar on hard facing. Avtom. svar. 17 no.8:90-91 Ag '64.
(MIRA 17:11)

SHABLYA, N.V.

SHABLYA, V.N. (Leningrad).

Observations and some conclusions on deposits around large hydraulic engineering structures erected on compressible soils. Izv. AN SSSR Otd.tekh. nauk no.10:161-170 O '54. (MLRA 8:3)

1. Leningradskoye otdeleniye instituta "Gidroenergoprojekt".
(Hydroelectric power stations) (Soil mechanics)

1. SHABLYGA, M. I.
2. USSR (600)
4. Forests and Forestry - Accounting
7. Improvement of labor accounting and determination of payments to workers.
Les. khoz. 5, no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953, Unclassified.

FUGZAN, M.D., kand. tekhn. nauk; SADOVSKIY, G.I., kand. tekhn. nauk;
ZHMURKO, P.T., gornyy inzh.; FILIPPENKOV, A.I., gornyy inzh.;
KOREN'KOV, E.N., gornyy inzh.; SHABLYGIN, A.I., kand. tekhn. nauk

Searching for optimal parameters of the induced block caving system
at the "Zapoliarnyy" mine. Gor. zhur. no.6:19-24 Je '65. (MIRA 18:7)

POPOV, G.N.; GORODETSKIY, P.I., professor, doktor tekhnicheskikh nauk, retsenzent; POLYAKOV, N.N., dotsent, retsenzent; SHABLYGIN, A.I., dotsent, retsenzent; BORISOV, A.A., dotsent, retsenzent; NEKRASOVSKIY, Ya.E., profesor doktor tekhnicheskikh nauk, retsenzent.

[Working mineral deposits] Razrabotka mestorozhdenii poleznykh iskopayemykh. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 531 p.
(MLRA 7:4)

1. Kafedra razrabotki rudnykh mestorozhdeniy Leningradskogo gornogo instituta (for Shablygin, Polyakov, Borisov). 2. Zaveduyushchiy kafedroy P.I.Gorodetskiy.
(Mining engineering)

SHABLYGIN, A.I.; YELISEYEV, V.G.; BOGUSLAVSKIY, E.I.

Problems of an efficient working of complex lodes. Zap. LGI 49
no.1:36-44 '64. (MIRA 18:8)

SOV-127-58-3-5/24

AUTHORS: Gorodetskiy, F.I., Gaydman, L.A., Pakhomov, A.S., Paliy, V.D., Sadovskiy, G.I. and Shablygin, A.I.

TITLE: Development of Methods of Exploitation in the Mine 7/9 of the Noril'sk Combine (Razvitiye sistem razrabotki na rudnike 7/9 Noril'skogo Kombinata)

PERIODICAL: Gornyy zhurnal, 1958, Nr 3, pp 21-32 (USSR)

ABSTRACT: The exploitation of dispersed ores of the Noril'sk deposits is made very difficult due to the unfavorable underground conditions and, till now, several methods of exploitation have been tried and rejected. The part of the Noril'sk deposits which forms the exploitation field of the mine 7/9 is formed by sheet-like deposit of the mineralized gabbro-diabases about 18-20 m thick. The ore body is divided by a tectonic break. The western part is occupied by the mine Nr 7, and the eastern - by the mine Nr 9. The exploitation is difficult because of: 1) extreme fracturing of the rocks, which does not allow the uniform crushing of the ore by blasting operations; 2) extreme toughness and adhesiveness of the ore and surrounding rocks; 3) metan emanations from the underlying layers; 4) eternal frozen state of the ore which excludes drilling with washing; and 5) the presence of mas-

Card 1/3

SOV-220-58-3-5/24

Development of Methods of Exploitation in the Mine 73 of the Noril'sk Combine

sive covering rocks which hampers their caving in and can create excessive pressure on the blocks. Many methods of exploitation have been tried since 1951 and each one has proved unsatisfactory. Finally the method of compulsory cave-in of blocks was adapted. In 1956 the Rudnaya laboratoriya gornoy pytno-issledovatel'skoy stantsii (The ore laboratory of the experimental-research station) (GCIS) of the Noril'sk Combine elaborated several variations of this method which were tried out during mining operations. The authors give a detailed description of the methods and of results obtained. The blasting method of the rocks covering the already exploited chambers was elaborated by the Kafedra razrabotki rudnykh mestorozhdeniy (The Chair of Exploitation of Ore Deposits) of the Leningrad Mining Institute. As a final result of these experiments it was found that normal working conditions in the mine could be assured when 1) the compulsory cave-in

Card 2/3

SOV-127-58-3-5/24
Development of Methods of Exploitation in the Mine 7/9 of the Noril'sk Combine

of the covering rocks is strictly observed; 2) a systematical exploitation of the blocks is observed; and 3) the time of preparation of the rock blasting is shortened, so, that there is no delay between the termination of the exploitation and the blow up of the covering rocks. There are 2 photos, 5 tables, and 9 diagrams.

ASSOCIATION: Rudnaya laboratoriya gornoy opytno-issledovatel'skoy stantsii Noril'skogo kombinata (GOIS). (The Ore-Laboratory of the Experimental and Research Station of the Noril'sk Combine (GOIS))
Kafedra razrabotki rudnykh mestorozhdeniy Leningradskogo gornogo instituta (The Chair of Exploitation of Ore Deposits of the Leningrad Mining Institute).

1. Mining industry---USSR
2. Ores---Production
3. Mining engineering

Card 3/3

GORODETSKIY, P.I.; POPOV, G.N.; SHABLYGIN, A.I.; BOGOMOLOV, V.I.; GALAYEV, N.Z.;
PANENKOV, Yu.I.

Method of working the Nikolaevskiy deposit. Gor.zhur. no.3:15-21
Mr '60. (MIRA 14:5)
(Nikolaevskiy (Ural Mountain region) - Mining engineering)

SADOVSKIY, G.I.; PAKHOMOV, A.S.; SHABLYGIN, A.I.; DOROKHOV, M.I.; ZAYDMAN,
L.A.; GRIGORYANTS, E.L.; VILLEM, E.Yu.

Improving mining technology in the "Zapolyarniy" Mine of the
Noril'sk Combine. Gor. zhur. no.11:31-38 N. '61. (MIRA 15:2)
(Noril'sk region--Mining engineering)

SHARLYGIN, A.I.

Industrial investigations of some efficient mining methods in the
"Zapoliarnyy" mine of the Noril'sk Combine. Zap. LGI 49 no.1:3-12
'64. (MIRA 18:8)

SHABLYGIN, M.V.

15 5540

38110

S/020/62/144/002/023/028
B101/B110

AUTHORS: Vlasov, A. V., Glazunov, P. Ya., Mikhaylov, N. V., Rafikov, S. R., Tokareva, L. G., Teetlin, B. L., and Shablygin, M. V.

TITLE: Formation of oriented structures in radiation-induced polymerization of vinyl monomers on fibers

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 2, 1962, 382 - 383

TEXT: An attempt was made to obtain oriented polymers by polymerizing the monomer from the gas phase on oriented macromolecules of fibers acting as "matrices". The experiments were made with a two-chamber apparatus as used for graft polymerization of vinyl monomers on mineral particles (cf. B. L. Teetlin et al., Tr. 2-go Vsesoyuzn. soveshch. po radiatsionnoy khimii, Izd. AN SSSR, 1962). One chamber contained caprone cord fiber heated to 80°C, and the other contained completely anhydrous acrylonitrile (40°C). Irradiation was made with X-rays (dose rate, $3 \cdot 10^{15}$ ev/cm²·sec) for 3 - 6 hrs at 10^{-4} - 10^{-5} mm Hg. The weight of the fiber increased by 15 - 33 %. The perpendicular dichroism in the $-C\equiv N$ stretching vibrations (2235 cm^{-1}), Card 1/2.

3

Formation of oriented structures in ... S/020/62/144/002/023/028
B101/B110

detected by spectroscopy, proved the orientation of the polymer. Experiments with acrylonitrile and non-oriented fiber as well as with liquid acrylonitrile and oriented fiber showed no dichroism. The liquid monomer molecules are assumed to prevent orientation. Further experiments with polymers, man-made and natural fibers used as "matrices" are under way. There is 1 figure.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR). Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fibers)

PRESENTED: January 19, 1962, by V. A. Kargin, Academician

SUBMITTED: January 12, 1962

Card 2/2

39847

S/190/62/004/008/005/016
B101/B138

9.4150
24.3300

AUTHORS: Mikhaylov, N. V., Shablygin, M. V.

TITLE: Procedure for producing and evaluating infrared absorption spectra of fibers in polarized light

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 8, 1962, 1155-1162

TEXT: IR absorption spectra of fibers in polarized light were discussed and compared, with parallel light rays passed through (A) a number of parallel fibers and (B) a single fiber. Method A is based on the theories of R. D. B. Fraser (J. Opt. Soc. America, 48, 1017, 1958) and O. O. Chingman (J. Chem. Phys., 27, 322, 1957). Immersion band compensation and the effect of fiber packing, i. e. the effect of the packing coefficient on the optical density of the absorption bands, are discussed. Equations are derived for calculating the equivalent immersion layer and packing coefficient. The theoretical results were confirmed by experiments with capron fibers, using hexachloropropylene or vaseline oil as immersion agents. For method B, a special reflecting microscope was used. A 60-80% loss in light intensity due to scattering from the fiber surface

Card 1/2

Procedure for producing and evaluating ... S/190/62/004/008/005/006
B101/B138

was successfully reduced by rolling the fiber. This imparts a qualitative character to the absorption spectra. CBr₄ was used as immersion agent, and a heater was designed so that photomicrographs could be made of single fibers at up to 250°C. Comparison of the two types of spectra provides information on the fiber structure. There are 8 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut
iskusstvennogo volokna (All-Union Scientific Research
Institute of Synthetic Fibers)

SUBMITTED: May 4, 1961

Card 2/2

MIKHALOV, N.V.; SHABLYGIN, M.V.; VOLOKHINA, A.V.

Mutual effect of monomers during their copolymerization. Vysokom.
sced. 5 no.11:1757 N '63. (MIRA 17:1)

SHABLYGIN, M.V.; MIKHAYLOV, N.V.

Immersion method used for obtaining the infrared absorption spectra of fibers in the polarized light. Khim.volok no.6:51-55 '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

IOVLEVA, M.M.; MIKHAYLOV, N.V.; MIKHELEVA, G.A.; SHABLYGIN, M.V.; FAPKOV, S.P.

Properties of gel particles in spinning solutions. Khim. volok.
no.6:41-44 '64. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo
volokna.

SIGAL, M.B.; SHABLYGIN, M.V.; VARSHAVSKIY, V.Ya.

Use of the infrared spectroscopy method for studying "polifen"
fibers. Khim. volok. no.2:25-27 '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo
volokna.

SHABLYGIN, M.V.; SHIBKOV, D.D.; KHEMATL, N.V.

Spectroscopic study in the infrared series. (Infrared spect.
3 no. 1: 56-64, T. 166. (MIRA 16:4)

L 53000-65 ENG(j)/EWT(m)/EPF(c)/EMP(j)/EWA(h)/EWA(l) Pc-l/Pr-l/Peb RM

ACCESSION NR: AP5010834

UR/0020/65/161/004/0857/0860

AUTHOR: Vlasov, A. V.; Tokareva, L. G.; Tsvankin, D. Ya.; Tsetlin, B. L.;
Shablygin, M. V.

TITLE: Formation of ordered polyvinylidene chloride by radiation polymerization from the gas phase onto an ordered polymer film

SOURCE: AN SSSR. Doklady, v. 161, no. 4, 1965, 857-860

TOPIC TAGS: ordered structure, polymer, polyvinylidene chloride, radiation polymerization polymer film

ABSTRACT: Readily crystallizable vinylidene chloride was polymerized from the gas phase onto a stretched film of high density polyethylene under X-ray irradiation. The study was made to examine the possibility of producing highly ordered layers of polyvinylidene. Condensation of vinylidene was prevented by selecting appropriate reaction conditions. An industrial RUP-200 X-ray generator was used as a source of radiation. Radiation intensity was 6 rads per second. The film temperature under irradiation was 60°C and the partial pressure of vinylidene monomer was

Card 1/3

L 53000-65

ACCESSION NR: AP5010834

500 mm Hg. The rate of polymerization was 5%/hr based on the weight of the starting monomer charge. The radiation polymerization efficiency was 1500 molecules per 100 electron volts. The ir absorption spectra indicate that polyvinylidene coating deposited on a stretched polyethylene film is highly ordered and crystalline. Polyvinylidene deposited on a relaxed polyethylene support is disordered. This behavior was confirmed also by the results of X-ray diffraction study. The polymerization of vinylidene chloride is initiated on a polyethylene radical produced by absorption of a hydrogen atom from a macromolecule of the polymer base. It is concluded that spatial orientation and crystallinity induced by the polymer base is different from that exhibited by ordinary stereospecific polymers. "The authors express gratitude to N. V. Mikhaylov, S. R. Rafikov, A. I. Kitaygorodskiy and G. I. Distler for participation in discussion of the results and for useful advice." Orig. art. has: 3 figures.

ASSOCIATION: Institut elementoorganicheskikh soedineniy akademii nauk SSSR (Institute of Organoelemental Compounds, Academy of Sciences, SSSR); Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fibers)

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L 53000-65

ACCESSION NR: AP5010834

SUBMITTED: 21Aug64

ENCL: 22

SUB CODE: Gc, op

NO REF SOV: 003

OTHER: 003

gah
ord 3/3

ACC NR: AP6015047

(A)

SOURCE CODE: UR/0190/66/008/005/0821/0828

AUTHOR: Kudryavtsev, G. I.; Odnorlova, V. N.; Shablygin, M. V.

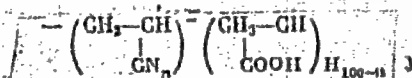
ORG: All-Union Scientific Research Institute of Synthetic Fibers (Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna)

TITLE: Synthesis and study of the thermal stability of acrylonitrile copolymers containing intermolecular ionic and chelate bonds

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 5, 1966, 821-828

TOPIC TAGS: copolymer, acrylonitrile acrylic acid copolymer, acrylonitrile formylacrylic acid copolymer, ionic crosslinking, chelate crosslinking, thermal stability

ABSTRACT: A comparison has been made of the effect of "cross-linking" by ionic and chelate bonds on the thermal stability of polymers. Copolymers of acrylonitrile (AN) with salt-forming acrylic acid (AA),



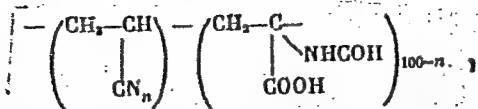
or chelating α (N-formylamido) acrylic acid (NFA),

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UDC: 541.64+678.13+678.745

L 26137-66

ACC NR: AP6015047



were used. The AN-NFA copolymers were prepared for the first time, in methanol in a stream of nitrogen in the presence of azobisisobutyronitrile initiator. The AN-NFA copolymerization reaction was studied as a function of the monomer ratio used and the monomer reactivity ratios were determined. Metal derivatives of both copolymers were obtained by treatment of the copolymers with metal acetates at 20 or 100°C. Study of the thermal stability of these metal derivatives revealed that the "cross-linking" of the AN-NFA copolymers by metal chelate bonds increased thermal stability and raised the decomposition temperature by 70--90°C. On the other hand, the "cross-linking" of the AN-AA copolymers by "ionic" bonds did not increase thermal stability. Orig. art. has: 5 figures. [SM]

SUB CODE: 07, 11/ SUBM DATE: 23Apr65/ ORIG REF: 004/ OTH REF: 004/ ATD PRESS: 4251

Card 2/2

S/135/62/000/003/006/00
AC06/A101

Author: Snablygin, S. V., Candidate of Technical Sciences, Sivolobov, V. V.,
Gargala, V. D., Perel'man, Yu. A., Engineers

Title: Clamps with a built-in toroidal transformer for spot welding steel
and aluminum alloys

Periodical: Svarochnoye proizvodstvo, no. 3, 1962, 30 - 31

Text: At the Saratov Polytechnic Institute and the Plant of Electrothermal
Equipment, CNI -66 (SPI-66) type suspended clamps were developed weighing 29 kgs
and having a pneumatic mechanism for pressing the electrodes. The clamps are in-
tended for welding aluminum alloy parts 0.8 + 0.8 mm thick, and low-carbon steel
parts up to 3 + 3 mm thick, with 20 kAmp short-circuit current of 50 cycles fre-
quency. When using 100 cycle frequency current, the thickness of aluminum alloy
parts can be increased to 1.5 - 2 mm. The clamps are different from conventional
ones by having a transformer in the toroidal form which presents a number of ad-
vantages over a shell type transformer, such as higher efficiency and more stable
welding conditions, in particular for spot welding aluminum alloys. The single-
coil design of the secondary transformer winding makes it possible to use cur-

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Clamps with a built-in toroidal transformer...

S/135/62/000/003/006/009
A006/A101

range of commercial and high frequencies at voltages permissible under safety conditions. The secondary winding of the transformer has a cylindrical shape and is simultaneously the clamp housing. The transformer has an annular magnetic hard conductor of 66 cm² section. The primary copper winding of 30 mm² section is wound around the magnetic conductor and has 20 turns. The fixed electrode holder is mounted on a central rod passing through the front lid. The movable electrode holder is mounted onto the external part of the housing and is electrically connected with the same. The high ratio of the weight of active materials to the total weight of the clamps (about 75%) raises the efficiency of the clamps at higher frequency ($f = 100$ cycles). There are 3 figures and 2 tables.

ASSOCIATIONS: Saratovskiy politekhnicheskii institut (Saratov Polytechnic Institute) (Shablygin, Sivolobov, Gargala); Zavod elektrottermicheskogo oborudovaniya (Plant of Electrothermal Equipment) (Perelman)

Card 2/2

SHABLYGIN, S.V.

USSR/Engineering - Welding, Method

Jul 51

"Resistance Welding With Utilization of Accumulated Kinetic Energy," S. V. Shablygin, Engr

"Avtozen Delo" No 7, pp 12-16

Expts showed principles of using accumulated kinetic energy in resistance welding as expedient. All on-off switching and regulation of current may be executed in low-power excitation circuit of generator, securing identity of welding-current impulses. Established possibility of constructing special low-voltage generator for use in welding without intermediate transformer.

200T41

SHABLYGIN, S. V.

USSR/Engineering - Welding, Equipment Apr 52

"On Application of AC Generators for Current Supply of High-Power Resistance Welding Machines," S. V. Shablygin, Engr

"Avtozen Delo" No 4, pp 7, 8

Discusses use of supply unit, consisting of low-power asynchronous motor with phase rotor and high-power ac generator, to which std resistance machine is connected. Control over welding process may be realized by breaking of generator circuit or by regulation of impulse excitation. Use of

212T31

rotary supply unit considerably levels down current impulses, conveyed into power line, and decreases, in many cases, wt and cost of welding equipment.

212T31

SHABLYGIN, S. V.

231T52

USSR/Metallurgy - Welding, Aluminum Oct 52

"Spot Welding of Aluminum Alloys by a Machine Utilizing Stored Kinetic Energy," S. V. Shablygin, Cand Tech Sci, B. V. Zhuravlev, Eng

"Aviogen Delo" No 10, pp 12-14

Experimentally corroborates possibility and expediency of using motor-generator unit for welding small thickness of aluminum alloys. Aluminum and duralumin specimens 3-4 mm thick were used in expts. Unit represented combination of 800-kva impulse single-phase

231T52

synchronous generator and overspeeding motor. Smoothing factor, i.e., ratio of generator impulse power to power taken from line, amounted to 6.4.

231T52

ZHURAVLEV, B.N., inzhener; SHABLYGIN, S.V., inzhener.

Effect of the frequency of a sinusoidal current on the size of electric contact welding machines. Avtog.delo 24 no.5:8-10 My '53. (MLRA 6:5)
(Electric welding)

84605

S/135/60/000/004/002/008
A115/A029

1.2300 only 2208,2708

AUTHORS:

Shablygin, S.V., Candidate of Technical Sciences, Devyatov, I.M.,
Engineer

TITLE:

Battery Supplied Contact Welding

PERIODICAL:

Svarochnoye proizvodstvo, 1960, No. 4, pp. 8 - 9

TEXT:

By order of the VNIIESO (All-Union Scientific Research Institute of Electric Welding) the SADI (Saratov Automobile and Highway Institute) developed a point-welding apparatus using 10 - 20,000 amp lead-acid or alkaline batteries. Characteristics of nickel-iron laminated, cadmium-nickel non-laminated, and lead-acid aircraft batteries were tested. The 6-CAM-55(6-SAM-55) lead-acid aircraft battery of 370x185x165 mm size, 20 kg weight and 12 v, has been found most suitable and was improved by I.M. Devyatov. (Fig. 1). Half-blocks of the same polarity were connected by massive copper bars covered by a lead cover with copper pipes in it for water cooling. The 6-SAM-55 battery blocks 1 and 2 have been used and the ribs were eliminated. The electrolyte was cooled sufficiently and the temperature did not exceed 40°C. The capacity of the new SAM-330 battery, is 330 amp-h. Figure 2 shows the temperature curves under a working discharge of 6000

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A115/A029

Battery Supplied Contact Welding

amp. A water-cooled graphite circuit breaker (Figure 4) has been used. The clearance between the graphite contacts does not exceed 1 mm which allows for 200 switchings per minute. During tests, the contactor performed about 200,000 breakings without any damage to the graphite surface. Two battery sets for spot welding of 1+1 mm steel, and for welding of 4+4 mm plates and 0.8+0.8 mm aluminum alloys have been designed. Characteristics of the battery sets are given in a table. The batteries were coupled with an АТП -25 (АТР-25) generator by a flexible cable. The characteristics of the generator are: 12/6 v, 750/1,500 amp, 1,420, rpm. The relatively high internal resistance of the generator makes possible continuous charging during the welding process. Working conditions are: welding 0.2 sec, welding current 6,000 amp, intervals 1.8 sec. The voltage of the generator during the interval was 7.8 v and during the welding process 6.4 v at 600 and 1,640 amp. The voltage of the generator has been selected so as to enable it to be charged during the interval and to replace the loss by discharge. Oscillograms of welding current and voltage are given in Figure 5. Battery welding units will find wider application in special instances of resistance welding, if batteries with sufficient term of service will be developed. There are 5 figures and 1 table.

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S/135/60/000/004/002/008
A115/A029

Battery Supplied Contact Welding

ASSOCIATION: Saratovskiy avtomobil'no-dorozhnyy institut, SADI (Saratov Highway
Institute).

Card 3/3

S/137/61/000/002/023/046
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1961, No. 2, p. 26 # 2E206

AUTHOR: Shablygin, S. V.

TITLE: On the Problem of Selecting Optimum Frequency for the Feed of Small Size Welding Tongs

PERIODICAL: "Tr. Saratovsk. in-ta mekhaniz. s-kh.", 1960, No. 20, pp. 65-70

TEXT: The author analyzes the application of high frequency current for reducing the weight of welding tongs with built-in transformer in resistance spot welding. The increased frequency should be employed for tongs and guns with a short throat and relatively low capacity. Calculations of the transformer and the experimental checking have shown that at a throat of about 100 mm, the higher frequency offers noticeable advantages over the commercial frequency. ✓

V. S.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

SHABLYGIN, S.V., kand. tekhn. nauk; SHAKHAROV, V.N., inzh.

Spot welding of grain harvester parts using a gun with a
built-in transformer. Svar. proizv. no.8:24-26 Ag '64.
(MIRA 17:9)

1. Saratovskiy politekhnicheskii institut.

L 20808-05 EWT(c)/EWA(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) Pf-4 AFTC(p)

ACCESSION NR: AR4048235

S/0137/64/000/009/E036/E036

SOURCE: Ref. zh. Metallurgiya, Abs. 9E237

AUTHOR: Shablygin, S. V.; Balatskiy, A. A.; Lashchiver, S. M.; Gurevich, A. I. ¹³

TITLE: Contact welding with the application of peaked current pulses

CITED SOURCE: Tr. N.-i. in-ta tekhnol. avtomob. prom-sti, vy*p. 12, 1964, 33-41

TOPIC TAGS: welding, welding equipment, welding current, contact welding, current pulse, peaked current pulse

TRANSLATION: Preliminary results are presented of an investigation of the operation of a contact welding machine whose design makes it possible to obtain peaked pulses of welding current which have a considerable magnitude but which are of short duration. A basic diagram of the setup is given. The effect of the angle of ignition of the ignitrons on the form of the pulse produced by the welding current and on the magnitude of the voltage in the condenser, as well

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ACCESSION NR: AR4048235

as the effect of capacitance on the nature of the process set up is considered. A process for rating current and voltage at the moment the power is switched on is described, and there is given a comparison of curves for current and voltage with the condenser and without it. The experiments made it possible to establish that in the operation of a welding machine using a synchronized circuit breaker followed by a condenser it is possible: 1. to produce peaked current pulses with a gradual increase in the peak magnitudes of the pulses, 2. to increase the limiting power of the welding transformer, and 3. to increase the power coefficient of the equipment to a value close to unity under the condition that low power (300-600 millifarads) condensers are used. 12 figures.

SUB CODE: MM

ENCL: 00

Card 2/2

SOKOLOV, Nikolay Mikhaylovich; SHABLYGIN, Spartak Vasil'yevich;
GARGALA, Vladimir Dmitriyevich; KOSTINA, V., red.

[Handbook for the electric welder] Spravochnik elektro-
svarshchika. Saratov, Privolzhskoe knizhnoe izd-vo,
1964. 174 p. (MIRA 18:3)

L 9682-66 EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HM

ACC NR: AP5027598

SOURCE CODE: UR/0135/65/000/011/0011/0013

AUTHOR: Shablygin, S. V. (Candidate of technical sciences); Shakharov, V. N.
(Engineer) 38
23

ORG: Saratov Polytechnic Institute (Saratovskiy politekhnicheskiy institut)

TITLE: Effect of the crest factor of nonsinusoidal welding current on the spot welding process

SOURCE: Svarochnoye proizvodstvo, no. 11, 1965, 11-13

TOPIC TAGS: pulse welding, spot welding, pulse shape, electric current

ABSTRACT: In recent years systems generating spiked welding-current pulses for spot and roller welding have been developed; the crest factor and shape of these pulses influence the regimes of the welding of thin and medium-thick work parts. In this connection, the results of a comparative experimental investigation of the effectiveness of spiked pulses are presented. 1 + 1 mm thick low-carbon steel was welded with 50 cps current on using a synchronous interruptor with a high ignition angle ($\psi_u = 106^\circ$) and 175 cps current. The experiments showed that spike welding required a lower intensity of mean square current, and involved a higher crest factor, than welding with high-frequency sinusoidal current. It is shown that pulse shape virtually does not affect the quality of the spot welding of steel more than 1.2-1.5 mm

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UDC: 621.791.763.011

L 9632-56

ACC NR: AP5027598

thick as well as of thinner specimens of steel in light jobs. The sole criterion determining the welding conditions in such cases is the mean square current, which in this case can be markedly reduced, while at the same time the maximum transformer power can be greatly increased, as compared with the use of commercial-frequency and sinusoidal currents. It is expedient to employ spiked pulses with a high crest factor in the spot welding of 1-1.2 mm thick steel. As the thickness of the welded sheets decreases (0.3-1.0 mm) it may be expected that the advantages of spike welding will become even more obvious. Furthermore, spike welding is particularly effective in the welding of uncleaned steel, where it markedly facilitates the breakup of scale and surface films. Orig. art. has: 5 figures, 1 table.

SUB CODE: 11, 13, 14/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001

Card 2/2

SHAB'NEV, V. G., Engineer

"Hydraulic Presses." Sub 10 Apr 47, Moscow Inst of Nonferrous Metals and Gold imeni M. I Kalinin

Dissertations presented for degrees in science and engineering in Moscow in 1947.

SO: Sum. No.457, 18 Apr 55

MUROMTSEV, A.K.; SHABODALOV, I.P.

Weather-resistant coatings based on copolymers of vinyl chloride
with vinyl acetate. Lakokras.mat.1 ikh prim. no.5:18-21 '60.
(MIRA 13:11)

(Protective coatings) (Ethylene)

MUROMTSEV, A.K.; ULANOVSKIY, I.B.; SHABODALOV, I.P.; KOROVIN, Yu.M.

Testing coatings for metal protection in fluctuating waterline zones.
Trudy Inst.fiz.khim. 8:387-395 '60. (MIRA 14:4)

(Protective coatings—Testing)
(Hulls (Naval architecture)—Corrosion)

SHABODO, I.

Bonus awards for workers of agricultural enterprises and organizations. Sots.trud 4 no.7:133-137 J1 '59. (MIRA 13:4)
(Agriculture) (Forests and forestry) (Bonus system)

SHABODO, I.

Bonus system for the large-scale mechanization of labor in cotton
growing. Sots.trud 5 no.3:48-52 Mr '60. (MIRA 13:6)
(Cotton growing--Labor productivity)
(Bonus system)

SHABODO, I.

Improve the establishment of work norms in agriculture.
Sots. trud 7 no. 5:75-79 My '62. (MIRA 15:5)
(Agriculture--Production standards)